

WHAT IS CLAIMED IS:

1. A lithographic apparatus, comprising:
 - a radiation system configured to provide a beam of radiation;
 - a support structure configured to support a patterning device adapted to impart a desired pattern to the beam of radiation;
 - a substrate holder configured to hold a substrate;
 - a projection system that projects the patterned beam onto a target portion of the substrate; and
 - an actuator configured to position at least one part within the radiation system, the support structure, the substrate holder, or the projection system, the actuator comprising a coil arrangement in thermal contact with at least one cooling element,
 - said at least one cooling element being provided with one or more slits configured to increase electrical resistance of eddy current paths.
2. A lithographic apparatus according to Claim 1, wherein the slits are arranged to be substantially parallel to each other.
3. A lithographic apparatus according to Claim 1, wherein the slits are arranged to be substantially perpendicular to the direction of the induced electric field.
4. A lithographic apparatus according to Claim 1, wherein the slits are arranged to be substantially parallel to the direction of the induced electric field.
5. A lithographic apparatus according to Claim 1, wherein the slits are arranged to be at an oblique angle, to the direction of the induced electric field.
6. A lithographic apparatus according Claim 1, wherein the slit lengths are limited so as not to extend across the entire length of the cooling element.

7. A lithographic apparatus according to Claim 1, wherein adjacent slits extend from opposite sides of the cooling element.

8. A lithographic apparatus according to Claim 1, wherein cooling channels are integrated with the slits in such a way as to provide a plurality of parallel paths arranged to reduce flow impedance.

9. A lithographic apparatus according to Claim 1, wherein cooling channels are arranged in a substantially symmetrical network to provide uniform coverage of the cooling element.

10. A lithographic apparatus according to Claim 1, wherein the slits are filled to protect from outgassing from the coil.

11. A device manufacturing method, comprising:
providing a substrate held by a substrate holder;
providing a beam of radiation using an illumination system;
imparting a desired pattern onto the beam of radiation by a patterning device supported by a support structure;
projecting the patterned beam of radiation onto a target portion of the substrate via a projection system; and
positioning at least a part of one of the radiation system, the support structure, the substrate holder, and the projection system by an actuator, the actuator comprising a coil arrangement in thermal contact with at least one cooling element, wherein the cooling element is provided with one or more slits configured to increase electrical resistance of eddy current paths.

12. A lithographic actuating mechanism, comprising:
a magnet assembly;
at least one cooling element; and
a coil arrangement in thermal contact with said at least one cooling element;
said at least one cooling element being provided with one or more slits configured
to increase electrical resistance of eddy current paths.

13. A lithographic actuating mechanism according to Claim 12, wherein the slits
are arranged to be substantially parallel to each other.

14. A lithographic actuating mechanism according to Claim 12, wherein the slits
are arranged to be substantially perpendicular to the direction of the induced electric field.

15. A lithographic actuating mechanism according to Claim 12, wherein the slits
are arranged to be substantially parallel to the direction of the induced electric field.

16. A lithographic actuating mechanism according to Claim 12, wherein the slits
are arranged to be at an oblique angle, to the direction of the induced electric field.

17. A lithographic actuating mechanism according to Claim 12, wherein the slit
lengths are limited so as not to extend across the entire length of the cooling element.

18. A lithographic actuating mechanism according to Claim 12, wherein adjacent
slits extend from opposite sides of the cooling element.

19. A lithographic actuating mechanism according to Claim 12, wherein cooling
channels are integrated with the slits in such a way as to provide a plurality of parallel
paths arranged to reduce flow impedance.

20. A lithographic actuating mechanism according to Claim 12, wherein cooling channels are arranged in a substantially symmetrical network to provide uniform coverage of the cooling element.

21. A lithographic actuating mechanism according to Claim 12, wherein the slits are filled to protect from outgassing from the coil.